REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-5 are pending, and claim 1 is amended by the foregoing amendment. Support for amended claim 1 can be found in Applicant's original disclosure at least at page 4, lines 8-14. No new subject matter is introduced by the foregoing amendment.

The Office Action objected to the specification for an informality. Claims 1-5 were rejected under 35 U.S.C. §102(b) as anticipated by Gerber et al. (U.S. Patent No. 5,401,913; hereinafter "Gerber"). Claims 1-5 were also rejected under 35 U.S.C. §103(a) as unpatentable over Gerber in view of either Bohn (U.S. Patent No. 6,537,412) or Johnston (U.S. Patent No. 5,153,050).

In response to the objection to the specification, the paragraph beginning at page 1, line 7, of the specification is revised by the foregoing amendment to address the informality indicated in the Office Action. As such, Applicant respectfully requests reconsideration and withdrawal of the objection to the specification. Moreover, the paragraph beginning at page 6, line 16, is amended to correct a typographical error (i.e., "multilayer circuit board 11" should read "multilayer circuit board 1"). Applicant submits that these foregoing changes are solely grammatical in nature and do not introduce new subject matter.

Regarding the prior art rejection under 35 U.S.C. §102(b), Applicant respectfully submits that Gerber fails to anticipate claims 1-5.

For example, amended claim 1 recites, among other features, "stacking an outermost conductor layer made of a copper foil on an insulating layer side of a first outermost printed board with a bonding layer being interposed therebetween; and pressing a stack so that the printed boards and the outermost conductor layer are bonded together." Referring to the non-limiting example shown in Figures 2G and 2H, an outermost copper foil 6 is stacked on the

insulating layer side of a printed board 2A, which is an outermost printed board with respect to the other printed boards. The outermost copper foil 6 is pressed along with the printed boards 2, 2A, and 2B to form a multilayer circuit board 1. See, e.g., Applicant's specification at page 6, lines 14-23. In this way, electrical signals can be transmitted through the inner via holes of the multilayer circuit board 1 to either outermost layer 5B or outermost layer 6 of the multilayer circuit board 1.

Gerber does not teach each and every feature of amended claim 1. Gerber is directed to the forming of a multi-layer circuit board including bump-shaped via metals 20, 42, 44, and 48. The multi-layer circuit board includes a cover metal layer 50 that is formed on the metal layer 34 of one of the outermost circuit boards. See, e.g., Gerber at Figure 10 and from col. 4, line 63, to col. 5, line 5.

The Office Action asserts that Gerber discloses a first outermost conductor layer at col. 6 lines 1-3, and at col. 7, lines 18-28. However, Applicant respectfully submits that these portions of Gerber do not teach "stacking an outermost conductor layer made of a copper foil on an insulating layer side of a first outermost printed board with a bonding layer being interposed therebetween," as recited in amended claim 1. Further, Applicant respectfully submits that no other portions of Gerber disclose this claimed recitation. For example, referring to Figure 10 of Gerber, the illustrated multi-layer circuit board does not include any outermost conductor layer made of a copper foil that is stacked on an insulating layer side of a first outermost printed board with a bonding layer interposed therebetween. Rather, the only illustrated outermost conductor layer appears to be the cover metal layer 50, which is formed on an conductor side of the corresponding printed board (i.e., on the metal layer 34). As such, Gerber fails to anticipate amended claim 1.

Accordingly, Applicant respectfully submits that amended claim 1 and its dependent claims 2-5 define over Gerber, which fails to teach each and every feature of these claims for

at least the reason discussed above. Applicants therefore respectfully request reconsideration and withdrawal of the rejection of claims 1-5 under 35 U.S.C. §102(b).

Regarding the rejection of claims 1-5 under 35 U.S.C. §103(a), Applicants respectfully submit that the suggested prior art combinations fail to teach or suggest claims 1-5.

Specifically, the Office Action turns to the teachings of Bohn and of Johnston to remedy the deficiencies of Gerber with respect to the pending claims. However, Applicant respectfully submits that neither of Bohn and Johnston discloses the claimed step of "stacking an outermost conductor layer made of a copper foil on an insulating layer side of a first outermost printed board," as recited in amended claim 1.

Bohn is directed to the formation of multilayers for use in electric multilayer switches. Each multilayer consists of outer layers 2a and 2b, which are made of metal foils, and inner layers 3. The metal outer layers 2a and 2b are formed against the inner layers 3 to protect them from contaminants in the environment. See, e.g., Bohn at Figure 1; col. 2, lines 44-49; and col. 3, lines 48-55.

However, Bohn does not teach "stacking an outermost conductor layer made of a copper foil on an insulating layer side of a first outermost printed board [including a via hole] with a bonding layer being interposed therebetween," as recited in amended claim 1. Rather, Bohn shows the attachment of an outer layer 2a to an inner layer 3 having conducting strips 3a, not to an "insulating layer side of a first outermost printed board [including a via hole]," as recited in amended claim 1. Also, none of the inner layers 3 of Bohn include an "insulating layer side." As such, Bohn fails to remedy the deficiencies of Gerber with respect to claim 1.

Further, Applicants respectfully submit that it would not have been obvious to one of ordinary skill in the art at the time of Applicant's invention to combine the teachings of

Gerber and Bohn. For example, the multi-layer circuit board of Gerber includes multiple via holes through which electrical signals can be delivered to a cover metal layer 50, which is an outer layer of the multi-layer circuit board and which can direct the signal to its ultimate destination. In contrast, the metal outer layers of Bohn are formed on inner layers of a multilayer to protect the inner layers from contaminants. These metal outer layers do not receive any signals from the inner layers (e.g., through via holes) and are not designed to receive such signals. Accordingly, an ordinarily-skilled artisan seeking to provide for the delivery of electrical signals through the multi-layer circuit board of Gerber to an outer layer would not have looked to the teachings of Bohn, which only shows the use of metal layers for environmental protection.

Thus, Bohn provides no motivation to persons skilled in the art to provide an outermost conductor layer made of copper foil on an insulating layer side of a first outermost printed board including a via hole, as recited in amended claim 1. Certainly, Gerber, which discloses a metal layer only on the conducting side of an outermost printed board, provides no such motivation. Accordingly, in the absence of such motivation in the prior art references themselves, these prior art references are not properly combinable under 35 U.S.C. §103, and amended claim 1 therefore patentably defines thereover.

Johnston discloses the forming of a foil 4 against a core 10, the lower surface 6 of the foil 4 representing a working surface to be etched. See the bottom portion of Figure 1 of Johnston. The core 10 consists of pre-etched boards 14 and prepregs 12. See Johnston at Figure 1 and col. 4, lines 23-28.

However, Johnston does not teach "stacking an outermost conductor layer made of a copper foil on an insulating layer side of a first outermost printed board [including a via hole] with a bonding layer being interposed therebetween," as recited in amended claim 1. Rather, Johnston shows the attachment of a foil 4 to a core 10 having conductive paths 15, not to an

"insulating layer side of a first outermost printed board [including a via hole]," as recited in amended claim 1. Also, the core 10 of Johnston does not include an "insulating layer side." As such, Johnston fails to remedy the deficiencies of Gerber with respect to claim 1.

Further, Applicants respectfully submit that it would not have been obvious to one of ordinary skill in the art at the time of Applicant's invention to combine the teachings of Gerber and Johnston. For example, the multi-layer circuit board of Gerber includes multiple via holes through which electrical signals can be delivered to a cover metal layer 50, which is an outer layer of the multi-layer circuit board and which can direct the signal to its ultimate destination. In contrast, the foils 4 of Johnston do not receive any signals from the core 10, and the core 10 itself is not designed to provide any signals to the foils 4 (e.g., by the use of via holes). Accordingly, an ordinarily-skilled artisan seeking to provide for the delivery of electrical signals through the multi-layer circuit board of Gerber to an outer layer would not have looked to the teachings of Johnston, which only shows the conducting of electrical signals along surfaces of different board layers.

Thus, Johnston provides no motivation to persons skilled in the art to provide an outermost conductor layer made of copper foil on an insulating layer side of a first outermost printed board including a via hole, as recited in amended claim 1. Gerber, which discloses a metal layer only on the conducting side of an outermost printed board, provides no such motivation. Accordingly, in the absence of such motivation in the prior art references themselves, these prior art references are not properly combinable under 35 U.S.C. §103, and amended claim 1 therefore patentably defines thereover.

Accordingly, for at least the above-discussed reasons, Applicant respectfully submits that amended claim 1 and its dependent claims 2-5 define over the suggested combinations of 1) Gerber and Bohn and 2) Gerber and Johnston. Applicants therefore respectfully request reconsideration and withdrawal of the rejection of claims 1-5 under 35 U.S.C. §103(a).

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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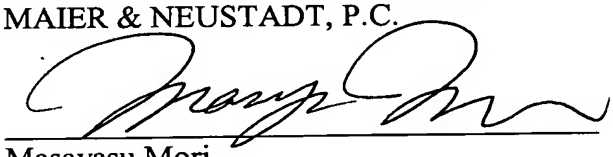
MAIER & NEUSTADT, P.C.



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